

Remarks

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

Initially, the Applicant's representative would like to thank the Examiner for conducting the telephonic interview on October 19, 2005.

Applicant hereby requests that the Information Disclosure Statement (IDS) filed with the Patent Office on January 25, 2005 be considered by the Examiner. Applicant also requests that the Examiner return an initialed copy of the form PTO-1449 which was filed as part of the IDS of January 25, 2005.

Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai (US 2002/0112905) in view of Nilsen (US 6,315,091). Claims 3 and 4 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai in view of Nilsen and further in view of Chamberlain (US 4,140,198) or Alderman (US 4,179,016). Claim 5 has been rejected under 35 U.S.C. §102(b) as being anticipated by Chamberlain or Alderman.

Claims 1, 2 and 4 have been amended so as to further distinguish the present invention recited therein from the references relied upon in the above-mentioned rejections.

Further, claims 1-5 have been amended to make a number of editorial revisions thereto. These revisions have been made to place the claims in better U.S. form. None of these amendments have been made to narrow the scope of protection of the claims, nor to address issues related to patentability, and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

In addition, new dependent claims 7 and 8 have been added.

The above-mentioned rejections are respectfully traversed and/or submitted to be inapplicable to the claims for the following reasons.

Claim 1 is patentable over the combination of Kitai and Nilsen, since claim 1 recites a power unit for a four-wheeled vehicle including, in part, a final reduction gear having an input shaft connected to a gear transmission via a propeller shaft; a brake device for rear wheels mounted to the input shaft of the final reduction gear; and an air discharging duct connected to a belt cover covering an automatic V-belt transmission such that the air discharging duct communicates with an air discharging hole of the belt cover, the air discharging duct having an outlet part for discharging air, wherein the air discharging duct extends to a vicinity of the brake

device so as to discharge air from the outlet part toward the brake device. The combination of Kitai and Nilsen fails to disclose or suggest the air discharge duct as recited in claim 1.

Kitai discloses an all-terrain vehicle (ATV) with a variable speed V-belt drive covered with a V-belt drive cover 200. The V-belt drive cover 200 has a cooling air inlet 201 and a cooling air outlet 202. A suction duct 206 has a lower end connected to the cooling air inlet 201 and an upper end that opens up under a front fender 205 of the ATV. A cooling air exhaust duct 211 is connected to the cooling air outlet 202, extends upward, and has an upper opening 211a under a seat 210 of the ATV. (See page 1, ¶¶ [0004]-[0008] and Figure 9).

In the rejection, it is admitted that the cooling air exhaust duct 211 does not correspond to the claimed air discharge duct because the cooling air exhaust duct 211 is positioned under the seat 210 so as to output the air from the V-belt drive cover 200 under the seat 210 via the upper opening 211a. On the other hand, claim 1 specifically recites that the air discharge duct extends to a vicinity of the brake device for the rear wheels so as to discharge air from the outlet part toward the brake device of the rear wheels. As a result, Nilsen is relied upon in the rejection as disclosing this feature of claim 1.

Nilsen discloses a brake cooling system for cooling a vehicle braking system 42 for the front wheels of an automobile. The brake cooling system includes an aperture 18 formed adjacent to a fog lamp 16 on the front of the automobile. A channel is formed in the front of the automobile by a first channel side 10 and a second channel side 11 such that when the automobile is moving forward, air enters the aperture 18 and is directed to a wheel housing 44 by the channel to cool the vehicle braking system 42. (See column 3, lines 3-51 and Figure 2).

In the rejection, it is indicated that the channel that directs the air to the wheel housing 44 to cool the vehicle braking system 42 corresponds to the above-discussed feature of claim 1 lacking from Kitai, and that it would have been obvious to combine the disclosure of Nilsen with that of Kitai because the combination provides efficient cooling for the brake system. However, the combination of Kitai and Nilsen is submitted to be improper for the following reasons.

As set forth in M.P.E.P. §2141, when applying 35 U.S.C. §103, the following four tenants of patent law must be adhered to:

(A) The claimed invention must be considered as a whole;

(B) The references must be considered as a whole and must suggest the desirability and thus obviousness of making the combination;

(C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

(D) Reasonable expectation of success is the standard with which obviousness is determined.

In considering tenants (B) and (C), it is noted that Kitai, as a whole, discloses a system for cooling a variable speed V-belt drive. The system includes the suction duct 206 that receives air from the front of the ATV and passes the air to the V-belt drive cover 200, where the air is used to cool the variable speed V-belt drive, and the cooling air exhaust duct 211 which removes the air from the V-belt drive cover 200 and expels the air under the seat 210 of the ATV. Further, Nilsen, as a whole, discloses the channel that directs the air from the front of the automobile to the wheel housing 44 to cool the vehicle braking system 42. In each of these systems, air is received from the front of the respective vehicle and used to cool either the variable speed V-belt drive or the brakes. Neither of these references provides any suggestion or motivation for routing air from a first element to a second element for cooling purposes in even a general sense.

Further, it appears from the disclosures of both of these references that their intention is to receive outside air directly from the front of the vehicle to which they are associated and use this air for cooling. However, one of the benefits of the invention of claim 1 is that the air discharging duct routes air that has been used to cool the automatic V-belt transmission to the vicinity of the brake device for the rear wheels so that the air can also be used to cool the brake device for the rear wheels. Therefore, since both Kitai and Nilsen are related to routing only outside air for cooling purposes, it is apparent that there is no disclosure in the references or any rationale that would be apparent to one of ordinary skill in the art whereby a combination of the disclosures of the references leads to the conclusion set forth in the rejection that the combination of Kitai and Nilsen results in efficient cooling for a brake system.

Regarding tenant (C), it is noted that M.P.E.P. §2145(X)(A) provides a discussion related to impermissible hindsight. This section of the M.P.E.P. quotes from the CCPA decision of *In re McLaughlin* and states “[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does

not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper." *In re McLaughlin*, 170 USPQ 209, 212 (CCPA 1971). As discussed above, neither Kitai or Nilsen discloses or suggests even the general concept of routing air from a first element to a second element for cooling purposes, and instead, the references disclose systems for solely cooling the variable speed V-belt drive and the front vehicle braking system 42, respectively. Further, general conclusion that it would be obvious to combine the disclosures of the two references because it would result in more efficient cooling for a braking system does not appear to be supported by the references when they are considered as a whole. As a result, it is submitted that the combination of Kitai and Nilsen is improper and fails to set forth a *prima facie* case of obviousness with respect to claim 1.

Claim 2 is patentable over the combination of Kitai and Nilsen, since claim 2 recites that the air discharging duct has a rising part which is higher than the outlet part of the air discharging duct, the outlet part is lower than the air discharging hole, and the rising part is provided between the outlet part and the air discharging hole. The combination of Kitai and Nilsen fails to disclose or suggest the air discharging duct of claim 2.

As discussed above regarding claim 1, Kitai discloses the cooling air exhaust duct 211 that is connected to the cooling air outlet 202 of the V-belt drive cover 200 extends upward, and has the upper opening 211a under the seat 210 of the ATV. As is clearly illustrated in Figure 9 of Kitai, the upper opening 211a is at the highest point of the cooling air exhaust duct 211 and is positioned above the cooling air outlet 202 of the V-belt drive cover 200. Therefore, the cooling air exhaust duct 211 necessarily fails to have a rising part that is higher than the upper opening 211a and also fails to have the upper opening 211a at a position lower than that of the cooling air outlet 202. As a result, the cooling air exhaust duct 211 does not correspond to the air discharging duct of claim 2.

As for Nilsen, it discloses that the channel directs air from the aperture 18 to the wheel housing 44. However, it is apparent that the channel also fails to disclose or suggest the features of the air discharging duct of claim 2. As a result, claim 2 is also patentable over the combination of Kitai and Nilsen.

Claim 5 is patentable over Chamberlain and Alderman, since claim 5 recites a brake cooling mechanism of a four-wheeled vehicle including, in part, a casing for housing a final reduction gear for rear wheels and a wet multiple-disk braking device, wherein a part of the

casing which houses the wet multiple-disk braking device has a front surface that is tilted with respect to a direction of width of the four-wheeled vehicle. Chamberlain and Alderman both fail to disclose or suggest the casing recited in claim 5.

Chamberlain discloses a wheel assembly for a vehicle 10 that is connected to a differential 38 via an axle shaft 48 located in a housing 40. The wheel assembly includes a disc brake assembly 64 and a double stage reduction gearing system 98 which is a final drive reduction system 98. The disc brake assembly 64 includes a number of disc brake packs 66. The axle shaft 48 passes through the disc brake assembly 64 and connects to the final drive reduction system 98 to rotate a wheel and tire 30. (See column 4, lines 22-32 and 48-53; column 5, lines 9-46; and Figures 2 and 3).

As discussed above and illustrated in Figures 2 and 4, the disc brake assembly 64 and the final drive reduction system 98 of Chamberlain are positioned within the wheel assembly so as to be concentric with the axle shaft 48 which is connected to the differential 38. However, it is clear from Figures 2 and 3 that the casing of the disc brake assembly 64 does not have a front surface that is tilted with respect to a direction of width of the vehicle 10. Instead, the front surface of the casing of the disc brake assembly 64 is parallel with the direction of width of the vehicle 10. As a result, Chamberlain fails to disclose or suggest the present invention as recited in claim 5.

As for Alderman, it discloses a final drive assembly in a casing 10 for a vehicle that is connected to a differential in a casing 11 via a half shaft 12. The final drive assembly includes a multi-disc brake including a pair of friction disc sets 22 and 23, a pair of pressure plates 24 and 25, a number of balls 26 and tension springs 52, and speed reduction gearing including a pinion 17 and a gear 18. The half shaft 12 passes through the multi-disc brake and connects to the speed reduction gearing to rotate a flange 16 to which a wheel is attached. (See column 1, lines 37-66 and Figures 1-3).

As illustrated in Figure 3, the multi-disc brake is positioned within the casing 10 of the final drive assembly so as to be concentric with the half shaft 12 which is connected to the differential 11. However, it is clear from Figure 3 that the casing 10 does not have a front surface that is tilted with respect to a direction of width of the vehicle. Instead, the front surface of the casing of the disc brake assembly 64 is parallel with the direction of width of the vehicle 10. As a result, Alderman fails to disclose or suggest the present invention as recited in claim 5.

One of the benefits of the invention recited in claim 5 is that the tilted front surface of the part of the casing which houses the wet multiple-disk braking device allows for better air flow across this portion of the casing. The improved air flow, in turn, enhances the capability to cool the braking device.

Because of the above-mentioned distinctions, it is believed clear that claims 1-5, 7 and 8 are patentable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-5, 7 and 8. Therefore, it is submitted that claims 1-5, 7 and 8 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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